IMPACT OF HELMET ADVOCACY AND ENFORCEMENT IN RAJASTHAN

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ABSTRACT

The Center for Road Safety at the Sardar Patel University of Police (SPUP), Security and Criminal Justice has started implementing a project to improve road safety in the state of Rajasthan, India. The specific objectives of this study was to record the impact of helmet use advocacy and legislative revision followed by advocacy for increased helmet use. A baseline study on Helmet Usage among 1, 17,553 two wheeler drivers was conducted during March 2015. After these series of enforcement and helmet advocacy programs were carried out by the Center for Road Safety. A post advocacy impact assessment survey was conducted with 1, 17,295 two wheeler drivers during December 2016. During the baseline, a total of seven high-traffic volume sites representative of each administrative divisional headquarter were selected for observation using stratified random sampling. A 35-item, face-to-face roadside interview tool was completed over seven, one hour time slots similar to that of observations. It was found that in the baseline, 39% (46,330) drivers wore helmet correctly, in the post-test 57.5% (67418) drivers wore helmet correctly, the difference was found to be significant (χ^2=503.839, p<0.0001). Though there is an increase in wearing helmet, but many people have started wearing helmet incorrectly (χ^2=9424.95, p<0.0001). It can be concluded that, there is a significant improvement in the behavior of individuals with regard to usage of helmet. The implication of this finding is that concentrated efforts of awareness generation have to be made in the divisions where the reported helmet use by driver is lower.

INTRODUCTION

Roads provide very important means of transport and communication throughout the world and have a great role to play in the development of nations and people through improving access to information and resources, leading to better health outcomes among populations. However, recent years have witnessed an increasing burden of traffic on the roads. The increasing number of vehicles has consequently led to increased opportunities for road traffic accidents to occur, thus placing a considerable health burden on populations because of the associated injuries, deaths and disabilities, world-wide [1]. Nearly two-thirds (62%) of the traffic accidents worldwide have been found to be taking place in 10 countries, which form slightly more than half (56%) of the world's population, with the maximum being in India followed by China, United States, The Russian Federation, Brazil, Iran, Mexico, Indonesia, South Africa and Egypt[1]. A review of research conducted indicated that though India has one percent of the world's vehicles but it accounts for six percent of world's road traffic accidents (RTA) [2].

World Health Organization reports that Seventy three percent of deaths due to RTAs from the South-East Asia Region are in India. RTAs account for 16.8 deaths per 100,000 population and around 2 million people in India are disabled due to RTAs [1]. The RTA rate of 35 per 1000 vehicles in India is one of the highest in the world and so is the associated RTA fatality rate of 25.3 per 10,000 vehicles [2]. Among the low- and middle-income countries, India accounts for a large share of the deaths and disabilities contributed by Road Traffic Injuries (RTI), owing partly to the country's large share of the world population and a lack of appropriate road safety measures [3]. The burden of road traffic injuries (RTIs) is increasing and, unless addressed, is projected to become the fifth-leading cause of death by the year 2030[4]. Low- and middle-income countries account for 92% of global RTI deaths, although their share of global vehicles is only 53%. Motorcyclists are a group of vulnerable road users, representing 23% of the global RTI burden [5]. Motorcyclists are the most vulnerable vehicle users in India [5]. In India, 136 834 persons reportedly died due to RTI in 2011 and an estimated 2 million people have disabilities as a result of RTCs. India has also experienced increased motorization, with the total number of registered vehicles increasing by as much as 161% between 2000 and 2010[5].

Transport Research Wing (TRW) of the Ministry of Road Transport & Highways is the nodal agency for providing information/ data on various aspects of road and road transport sector. This agency brings out every year an annual report on Road Accidents in India [6]. The annual report of 2015 provides various aspects of road accidents in India during the year 2015. The total number of road accidents increased by 2.5 per cent from 4, 89,400 in 2014 to 5, 01,423 in 2015. The total number of persons killed in road accidents increased by 4.6 per cent from 1, 39,671 in 2014 to 1, and 46,133 in 2015. Road accident injuries have also increased by 1.4 per cent from 4, 93,474 in 2014 to 5, and 00,279 in 2015. The severity of road accidents, measured in terms of number of persons killed per 100 accidents has increased from 28.5 in 2014 to 29.1 in 2015[7]. The analysis of road accident data 2015 reveals that about 1,374 accidents and 400 deaths take place every day on Indian roads which further translates into 57 accidents and loss of 17 lives on an average every hour in our country. About 54.1 per cent of all persons killed in road accidents are in the 15 – 34 years age group during the year 2015. Drivers' fault has been revealed as the single most responsible factor for road accidents, killings and injuries on all roads in the country over a long period of time [7].

Motorcyclists constitute the largest proportion (71%) of vehicle users in India and, compared with other vehicle users, this group has a higher proportion of RTIs (22.5%) [5]. Helmet use is mandatory for both motorcycle drivers and pillion riders (co-passengers) in Rajasthan. Among motorcyclists, injury to the head and neck is often the main cause of death and disability, and helmet use can reduce this risk substantially. Non-use of helmets is associated with injuries and disabilities that result in higher treatment costs in the event of a crash [5]. Enforcement of helmet laws has demonstrated a decrease in rates of head injuries and deaths, while repealing these laws has shown an increase in these rates.

Some of the national level data on Road traffic accidents can be accessed from the NCRB reports widely available on the internet. However, this database in itself is inadequate to address the varied dimensions of the road traffic accident problem. In absence of such a comprehensive national level database on epidemiology of RTAs, information can be accessed from a number of small research studies conducted by various research organizations and individual scholars across India [8]. In India, data from the Ministry of Road Transport and Highways (MORTH) and National Crime Records Bureau (NCRB) are publicly available. While these provide data on outcome indicators (crashes, injuries, deaths) these do not provide adequate information on risk factors such as helmet-use, seatbelt use, drink driving, and other determinants of injury outcomes.

A road traffic accident (RTA) is any injury due to crashes originating from, terminating with or involving a vehicle partially or fully on a public road. It is projected that road traffic injuries will move up to the third position by the year 2020 among leading causes of the global disease burden. They are considerable economic losses to victims, their families, and to countries as a whole (National Health Portal) [9]. The Global status report on road safety 2013 indicates that worldwide the total number of road traffic deaths remain unacceptably high at 1.24 million per year. Road traffic injuries are the leading cause of death among young people, aged 15–29 years. Majority of the world's fatalities on the roads occur in low-income and middle-income countries, even though these countries have approximately half of the world's vehicles. Rapid urbanization, motorization, lack of appropriate road engineering, poor awareness levels, nonexistent injury prevention programs, and poor enforcement of traffic laws has exacerbated the situation. There is lack of information on risk factors such as helmet-use, seatbelt use, drunken driving, and other determinants of road traffic accidents and injury outcome in India [10].

Road traffic injuries (RTIs) are a leading public health problem and the understanding of RTIs in rural India is limited. A report on the burden, pattern, characteristics and outcomes of RTIs in a rural district of India reported that RTIs contributed for 38% of fatal and 39% of non-fatal injuries with an annual mortality rate of 18.1/100,000 population/year. Young males were affected most and two-wheeler users and pedestrians were involved in 45% and 20% of fatal crashes, respectively. Nearly half (51%) of fatal RTIs occurred on national highways of the district; 46% died immediately at the site. Among those hospitalized, 20% were under the influence of alcohol while use of helmets and seat belts was <5%. Trauma care was deficient in the district leading to greater number of referrals. Road safety should be given high importance in rural India with a focus on safe roads, safe vehicles and safe people along with trauma care [11].

Keeping the above constraints in mind, the Center for Road Safety at the Sardar Patel University of Police, Security and Criminal Justice, Rajasthan had started implementing a project after this baseline study to improve road safety in the state of Rajasthan, India through legislative revision followed by advocacy for increased helmet use. Series of activities were carried out on helmet advocacy and awareness campaigns in Rajasthan by the Centre for Road safety along with the legislative revision. The Dept. of Social Work, Central University Rajasthan was involved in the post advocacy data collection and studying the impact of the advocacy during December 2016.

METHODS

The Center for Road Safety at the Sardar Patel University of Police (SPUP), Security and Criminal Justice has started implementing a project to improve road safety in the state of Rajasthan, India. The focus of the interventions includes a gazette (legislative) revision to make helmet compulsory for all two wheeler passengers, followed by advocacy for implementation of the new legislation. The overall goal of this study was to estimate the impact of activities conducted at baseline of the project in Rajasthan. This baseline fills the gap in literature and informs the collaborating partners and stakeholders on the situation of these risk factors and guide future interventions in Rajasthan and similar settings in other low and middle income countries. The specific objectives of this study report were (1) To record the usage of helmet use among two wheeler riders in Rajasthan; (2) to study the attitude and practices of two wheeler use and helmet use in Rajasthan and (3) to study the impact of helmet use advocacy and legislative revision followed by advocacy for increased helmet use.

An observational study to assess helmet-use among motorcyclists and pillion riders was conducted in February-March 2015 for baseline survey and during December 2016 for the post survey. In the baseline, a total of 117,553 two wheeler drivers for helmet use were observed. After these series of enforcement and helmet advocacy programs were carried out by the Center for Road Safety. A post advocacy impact assessment survey was conducted with 1, 17,295 two wheeler drivers during December 2016. A total of seven high-traffic volume sites representative of each administrative divisional headquarter were selected for observation using stratified random sampling. The strategy implemented in selection of sites was such that four were in urban area, two were in rural area and one was on highway were selected for observation using stratified random sampling, such that four were in urban area, two were in rural area and one was on highway. At each of these sites, the data collectors took positions on the side of the road and observed all motorized two-wheelers in one direction to record observations.

The baseline and post data collection instruments consisted of observation protocols, data recording sheets, and roadside interviews developed from similar studies conducted. Before the data collection, pretesting of tools were carried out. For the baseline data collection, drafts of tools were pre-tested for language, comprehension, ease of completion and then finalized for data collector training. The interviewers completed a 35-item, face-to- face roadside interview designed to assess knowledge of, attitude towards and practices related to helmet use.

The collected data was subjected to analysis with the help of STATA 12[12]. Tabulation and descriptive analysis was conducted to estimate prevalence of helmet-use, and knowledge, attitude and practices related to the two risk factors. Tabulation and descriptive analysis was conducted to estimate prevalence of helmet-use, and knowledge, attitude and practices related to the two risk factors. Frequency and Percentage distribution was used describe the data. Further, results were derived by calculation of the percentage proportions for the pre and the post data collected. The "N-1" Chi-squared for the comparison of two proportions (from independent samples), expressed as a percentage, was computed to assess the significant differences between the pre and the posttest observations [13]. MedCalc [14] free online calculator was used as recommended by Campbell (2007) [15] and Richardson (2011) [16].

The researchers and data collection team has taken utmost care to keep the identity of the individuals who were interviewed. Ethical clearance for conducting such research was sought from appropriate registered body, recommendations of the ethical clearance committee was implemented. The data collection team was trained to behave and maintain respect of the individuals interviewed. The information collected has been used confidentially and for the research purpose only.

RESULTS

Baseline survey interview with the motorcycle drivers shows that 3% had no schooling. About 9% have post-graduation or professional course, 27% have graduate, and 61% were pass up to class 12. In the post data, 7% were seen to have no schooling, about 13.4% have post-graduation or professional course, 36.5 have schooling up to class 12 and about 38% were pass up to class 12. What is needed to be noticed that, illiterates are also driving the two wheelers. How is it possible that an illiterate person can possess driving license. Two wheelers are sold to individuals without driving license and educational background.

Two wheeler drivers were stopped and interviewed for the usage of motorcycle. In baseline survey it was noticed that, among the top five reasons reported for motorcycle trip, the main reason was travelling to/for work which was a little less than 50%, in the post survey it was found to be 54.3%. In baseline about 17% reported that they were travelling to school/college, in post survey, very few (2.7%) were travelling to school or college. In baseline it was observed that 11% of the respondents were driving for commercial activities, in post survey 29.2% were found to be driving for commercial activities. In the post survey a decline of proportion was found for travelling for pleasure, from about 10% to 6%. Not much of change was noticed for using motorcycle for shopping. It can be seen that a reduction in traveling to school from 17% to 2.7% is noted. The recent change in enforcement strategy of under-age individual should not drive the two-wheeler may be effectively used. However, the post survey interviews reveal that there is an increase of two wheelers for commercial activities.

Possession of Driving License

Overall, in the baseline, only two third (66.3%) of the drivers who were interviewed possessed a license; however, in the post data collection more than three fourth (79%) possessed license. A significant change of 12.6% was found ($p<0.05$), indicating significant improvement. The reason for non-possession of license is due to lack of effective enforcement mechanism. Many of the rural users are not educated enough to get license. However, they have to use two-wheelers for their survival and living. Often a two wheeler is the only available transport for petty use and also for major income source, like selling milk or vegetables and also transporting household needs. This is a very complicated issue. In some semi urban areas, below 18 years old individuals driving two-wheeler were also observed by the data collection team. Under age drivers are mostly the school going children, going for tuition or school or college. There is another complicated issue, as it is, culturally not desired that, wives should be pillion riders for husband; hence women seek their underage daughter or son to drive them for personal use like visiting relatives, shopping or visiting the hospitals etc.

It should be noted that, the data collection team has only enquired whether they possess driving license or not. Physical verification of driving license was not done, further only a small proportion of drivers were stopped and asked for possessing driving license. This indicates that there may be a larger chunk of individuals without any driving license and may be without any educational background. The issue is a significant percentage of the drivers do not possess license which is very worrisome. If the reason is that they were not able to clear driving test thus found ineligible for license but still driving on the roads then we can imagine by what percentage we are increasing the probability of road crashes in Rajasthan. Hence law enforcing agencies need to be very strict for not allowing the individuals who do not possess license to drive on road. They are not only putting their life in danger but also increasing the threat on the lives of others who are driving safely on roads.

Pattern of Helmet Use among Two Wheeler Drivers in Rajasthan

In the baseline, a total of 117,553 two wheeler drivers for helmet use were observed (Table 1). Among them 39% (46,330) drivers wore helmet correctly and about 2% (2254) wore helmet incorrectly while 59% (68969) did not wear helmet while driving. In the post test it is seen that, 117295 two wheeler drivers for helmet use were observed, among them 57.5% (67418) drivers wore helmet correctly and about 17.75 (20828) wore helmet incorrectly while 24.76 % (29049) did not wear helmet.

TABLE 1 Pattern of helmet use among two wheeler drivers in Rajasthan

Drivers helmet status (in %)	Male		Female		%(Total)		Significance	
	Pre (%)	Post (%)	Pre (%)	Post (%)	Pre (N=117,553)	Post (N=117,295)	χ^2	p
Wore correctly	87.2	87.64	12.8	12.35	39.4(**46330**)	57.5(**67418**)	3598.409	p<0.0001***
Wore	89.4	83.9	10.6	16.1	1.91(**2254**)	17.75(**20828**)	375.828	p<0.0001***
Did not wear	87.2	77.98	12.8	22.01	58.7(**68969**)	24.76(**29049**)	9424.955	p<0.0001***

*Level of significance: NS= Not Significant *=p<0.05, **=p<0.01, ***=p<0.001*

There is a significant change found in all the three types of users (p<0.0001). It is seen that reduction in 'did not wear' cases was 33.94%, there was 18.1% increase in 'wore correctly cases' and 15.84% increase in the 'work incorrectly' cases. Among the correct helmet wearing drivers, about 87% were males and about 13% were females, and among those who did not wear helmet at all about 87% were males and about 13% were females. Among the drivers who had worn helmet incorrectly about 89% were males and about 11% were females. In the post test it is seen that there is a reduction among males wearing helmet incorrectly and increase among women wearing helmet incorrectly. Though there is an increase in wearing helmet, but many people have started wearing helmet incorrectly (χ^2=9424.95, p<0.0001). From table no.1, it can also be concluded that there has been a significant improvement in helmet use behavior among men than women.

Gender and Helmet Usage

Among the correct helmet wearing drivers, about 87% were males and about 13% were females, and among those who did not wear helmet at all about 87% were males and about 13% were females. Among the drivers who had worn helmet incorrectly about 89% were males and about 11% were females. In the post test it is seen that there is a reduction among males wearing helmet incorrectly and increase among women wearing helmet incorrectly.

Quality of Helmet

This shows that there is an increase in people wearing the helmets, but the quality of helmet and proper wearing has come down. The reason for such behavior is the fear of being fined by police. Hence, the drivers wear a helmet which is cheap and looking good ('sastha, sundar, tikau') to avoid penalty. The reason for such behavior is that the attitude that, helmet is to be worn only for sake of police and enforcement or for environment protection and not as a self-feeling of safety.

Division wise change in Helmet Usage Behavior

Division wise data reflects that highest use of helmet was reported in Jaipur division (63%) and lowest was in Bharatpur division (15%). In both of the divisions per cent of women wearing helmet was higher than men. During the post survey a slight but significant improvement of 4.4% was seen in the Jaipur division. In Jaipur, Ajmer and Bharatpur the percentage of female wearing helmet correctly was higher than that of males, in Bikaner and Kota it was almost equal and in Udaipur and Jodhpur percentage of males wearing the helmet correctly was much higher than that of females. During the post survey, in Ajmer, Bharatpur and Kota, the percentage of female wearing helmet correctly was higher than that of males. In Bikaner almost equal correct use was seen among male and female helmet users. While in Udaipur, Jaipur and Jodhpur percentage of males wearing the helmet correctly was much higher than that of females. A significant change in proper usage of helmet was seen in all the divisions ($p<0.05$). The maximum change was reported in Bikaner division (48.3%), followed with Jodhpur division (44%), minimum change was found in Ajmer (4.7%) and Jaipur (4.4%). This indicates that throughout the Rajasthan there has been improvement in the helmet usage.

Self-report of helmet usage in past 30 days

Interviews carried out with two wheeler drivers, during baseline and post survey reveal that; in urban area 55% wore helmet all the time in past 30 days in baseline and almost 57% reported same during the post survey. The gaps between self-reporting and actual use indicates that self-reporting was very high than real status. Thus for any intervention data obtained from observation should be considered more reliable and a better output indicator than self-reporting. However, significant change was found for some time and never reporting population. It is seen that, during baseline 25.6% reported to wear sometime and in post survey 42.7% had reported wearing sometime. A significant change of 17.1% in positive direction, similarly positive significant change of 17.6% was found for the 'never' reporting population. This indicates that Rajasthan people have started to wear helmet, those who report some time wearing are

increasing in number. Now it was interesting to note that if we segment the population according to their educational level, sex and place of intervention – rural, highway and urban and then develop communication strategy for behavior change then there is a higher probability of satisfying results with higher efficiency and effectiveness.

In the rural area also positive significant change was found for the 'all the time' 18.8%; sometimes was 12.8%; and never was 22.3%. This indicates that there is a positive change in helmet usage. Among the highway users there was a positive significant change of 31.5% users wearing helmet all the time; sometimes use of helmet was also declined up to 18.5%. Positive significant change was seen among male helmet users ($p<0.01$) for all categories. However, similar significant change was not noticed among female two wheelers. Except, that never helmet use had undergone positive significant change of 14.2% ($p<0.05$).

Overall, motorcycle drivers from rural, urban and highways showed significant improvement ($p<0.05$). The overall proportion of motorcycle drivers, in baseline, who self-reported to always wear helmet was 55%, in the post survey it was found to be 77.1%. The change was found to be 22%, it was also found to be statistically significant. Further, in the baseline survey, almost 66% female and 54% male reported to always wear helmet, however, in post survey only male have reported to wear helmet more than females. A positive significant change of 22% was found among male helmet users ($\chi^2=73.232$, $p<0.0001$), no significant change was found among females ($p>0.05$). It is recommended that an attitudinal change for female drivers need to be brought in always use of helmet.

Reason Reported For Helmet Use

The top reason for wearing helmet during baseline was that helmet can save life, which was 68.8% during the post survey it was found to be 81%. It was also found to be significant ($\chi^2=15.212$, $p<0.0001$). The top most reason which showed positive significant change from baseline to post ($p<0.0001$) was to protect from weather (54.4%) and forced by family (50.2%). Enforcement by police and required by law was found to be a significant promoter of always wearing helmet ($p<0.01$).

Attitudinal change on reason for wearing helmet was estimated. When asked why they prefer to always wear helmet, they reported different reasons for this. In the baseline survey, when asked about top five reasons to always wear helmet, a little more than two third of the participants reported that they wear helmet because it can save their life, a little less than half of them were of the opinion that it was required by law, one third told that they wear helmet in order to prevent fine by police. Less than one fourth reported that they wear helmet to protect themselves from weather and 2% reported that their family members force them to wear helmet. Three fourth of male and one third of female reported that they wear helmet to save their life. Gender wise change in attitude related to wearing of helmet depict that though 15.7% change was noted among females for enforcement as reason for wearing helmet but it was not found to be significant ($p>0.05$). Top two significant reasons reported by both male and female helmet users was 'protection from weather' and 'forced by family' ($p<0.0001$).

What is significant to note that, the attitude of personal safety and security for using helmet is not emerging as a concrete reason. The other reasons for using helmet is citied, it is recommended that, how helmet can save our lives, IEC materials, true stories and videos to improve this behavior need to be emphasized. Use of helmet was negligibly forced by family members and the irony is that ultimate suffering after any injury/casualty is of family members. Again there is a wrong perception of even those who wear helmet because of police, weather or law which needs to be corrected. They should realize that by wearing helmet in-fact their life would be saved. Further if their life is saved then the family/dependents future would be secured. They can also contribute into lessening the hospital burden, health care costs borne by government and losses in revenues that insurance companies face every year.

RECOMMENDATIONS

On the basis of the results of the study, observations and discussions about helmet usage among two wheeler drivers in Rajasthan, the following recommendations are provided. It is observed that, many of the residents in Rajasthan need a two wheeler for personal use. As still a large chunk of population is residing rural areas with no public transport facility. Further, it is also observed that often a personal motorcycle is the only vehicle available for survival and living. However, what is alarming to note is the improper usage of motorcycle for various usage other than just travelling with purpose to reach destination. As per the traffic laws, a motorcycle should be used only to transport maximum two individuals with minimum personal belongings. It is reported here that the motorcycle is used for many activities, including for commercial usage. The post survey interviews reveal that there is an increase of two wheelers for commercial activities. Enforcement on proper usage of motorcycle should be looked at to reduce accidents.

It was observed that from baseline to post survey, there is a significant improvement in the usage of helmet. What was more striking observation was that *though there is an increase in wearing helmet, but many people have started wearing helmet incorrectly.* The people who are wearing helmet reported that they either feel discomfort in wearing the helmet or they forget as there is no enforcement. It could be that, since, many people have started using helmet recently, as it is enforced, thus they are reporting it as uncomfortable. However, in semi urban and rural areas helmet use enforcements are also low; hence, some drivers report that 'as nobody is asking, we are not wearing helmet'. In the post test it is seen that there is a reduction among males wearing helmet incorrectly and increase among women wearing helmet incorrectly. Same behavior is seen with women pillion riders also. There is a need to target the women for awareness programs. The surveys showed that there was an increase in people wearing the helmets, but the quality of helmet and proper wearing has come down. The reason for such behavior is the fear of being fined by police. Hence, the drivers wear a helmet which is cheap and looking good ('sastha, sundar, tikau') to avoid penalty. The reason for such behavior is that the attitude that, helmet is to be worn for sake of evading fine or for environment protection and not as a self-feeling of safety. There shall be a targeted awareness programs to change this attitude of public.

It was observed that, in the random sample selected and self-reports collected, almost 30% of population still self-reported not to possess license. This situation may be with the tip of the iceberg, it is estimated that a large population of motorcycle drivers from rural and semi urban populace may not be holding any license. Strategies shall be evolved to include all the drivers to possess motorcycle driving license. Under age drivers are mostly the school going children, going for tuition or school or college. A foolproof mechanism to provide license and regulating the mechanism is required. The issue is a significant percentage of the drivers do not possess license which is very worrisome. If the reason is that they were not able to clear driving test thus found ineligible for license but still driving on the roads then we can imagine by what percentage we are increasing the probability of road crashes in Rajasthan. Hence law enforcing agencies need to be very strict for not allowing the individuals who do not possess license to drive on road. They are not only putting their life in danger but also increasing the threat on the lives of others who are driving safely on roads.

Now it was interesting to note that if we segment the population according to their educational level, sex and place of intervention – rural, highway and urban and then develop communication strategy for behavior change then there is a higher probability of satisfying results with higher efficiency and effectiveness. The gaps between self-reporting and actual use indicates that self-reporting was very high than real status. Thus for any intervention data obtained from observation should be considered more reliable and a better output indicator than self-reporting. It is felt that the attitude of the drivers is such that, they are willing to take risk for comfortable drive. The blame is often sighted on low enforcement. What is significant to note that, the attitude of personal safety and security for using helmet is not emerging as a concrete reason. Attitudinal change among public to adopt safety first and comfort next, even when no enforcement is present, has to be brought.

CONCLUSION

The issue of concern is why improper use of motorcycles and helmet still exists. It is observed that the public do not bother about their life and their dependents or it is due to unawareness or it is due to carelessness or because law enforcement authorities do not push them by penalizing economically and legally. Whatsoever is the reason the truth remains that the number of injuries/casualties are increasing every year. Burden on the health care system is also on rise, hospitals both public and private are getting higher number of injury cases due to road crash, insurance companies have to pay for damages that occur due to crash for repair of vehicle and casualty finally the victim's family come under stress and depression. This is true that each individual has to take the responsibility of use of helmets and the responsibility cannot be transferred on concerned government departments.

There is a need of systematic intervention and careful efforts by the policy makers and planners to increase the use of helmets and proper use of motorcycles. Unlike development sector where things happen over a period of time with its own pace the compulsory use of helmet by driver and passengers needs to be done in one go followed by a sensitive monitoring and follow up system. We need to see the best practices and adapt the same in Rajasthan regarding helmet use

by driver and all passengers. The implication of this finding is that concentrated efforts of awareness generation have to be made in the divisions where the reported helmet use by driver is lower. Mass media campaign about telling the benefits of helmet and seatbelt use needs to be launched. Government of Rajasthan should make compulsory law for use of protective head gear and seatbelt. Further a provision of heavy fine may also be made for the defaulters. Initially there may be some hesitation, issues and reluctance regarding the implementation from both the sides but gradually the law enforcing agencies and general public will realize the ultimate benefits of using protective measures. A massive campaign in Rajasthan regarding the use of helmet and seatbelt may be started with intelligent use of Information Communication Technology (ICT) for awareness generation and Behavior Change Communication (BCC) with Information Education Communication material.

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